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EXAMINER

NOLAN, DANIEL A

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/673,360

**Applicant(s)**

OBA, TOSHIHIKO

**Examiner**

Daniel A. Nolan

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 5 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 35-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 35-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 18.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Response to Amendment***

2. The reply filed 05 April 2004 was applied with the effect that claims 35-52 were elected and examined on the merits.

### ***Specification***

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- There is no disclosure of the "syntactically different form" of claim 39 (2<sup>nd</sup> line).
- The Examiner is proceeding with the understanding that the claim is for producing the speech into a different form, as speech-to-text.

4. The lengthy substitute specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware

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in the specification, such as that the word "*fort*" which should be - - *for* - - (page 13, 2<sup>nd</sup> line of the amendment, paper #5, to page 50 line 10) is as intended in the substitute specification.

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- The feature of "*library of formants*" for claims 44 & 45 is not found in the disclosure.
- The feature of "*abridging the content*" for claim 47 is not found in the disclosure. The Examiner is proceeding with the understanding that the intent of the feature is to "*prepare for publication*"

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

"Displaying the Source or Meaning of Sounds and Speech".

### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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8. Claims 39 and 47 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

- Regarding claim 39, in order for the “syntactically different” feature to take place some attribute such as number, sex or tense would change, such as from “past” to “future” tense. There is no disclosure that supports the limitation of “syntactically different form” of claim 39 (2<sup>nd</sup> line). The Examiner is proceeding with the understanding that the claim is for producing the speech into a different “*format*”, as speech-to-text.
- Regarding claim 47, because the term “*abridging a content*” may indicate the extremes of *editing* from *shortening* or *elaborating*, a conclusion is required that would leave the claim subject to interpretation. The Examiner is proceeding with the understanding that the claim is intended to “*prepare for publication*”, i.e., to change from sound to visual formats.

### ***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 35, 36, 38, 39 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Marley<sup>'813</sup> (U.S. Patent 4,181,813 A).

11. Regarding claim 35, the invention of Marley<sup>'813</sup> *for speech recognition* reads on every feature of the claim for *a prosthetic hearing device* as follows:

- Marley<sup>'813</sup> (32-48 in figure 3) reads on the feature of *a sensor for detecting a linguistic sound*;
- Marley<sup>'813</sup> (250-256 in figure 9) reads on the feature of *a sound recognition processor that performs sound recognition on the detected linguistic sound*;
- Marley<sup>'813</sup> reads on the feature of *a sound information generator that analyzes results of sound recognition by the sound recognition processor to comprehend a semantic meaning (column 1 line 65) in the linguistic sound and generates sound information (12' in figure 3) in which the linguistic sound is transformed so as to become assistive in understanding the semantic meaning (column 3 lines 4-7); and*
- Marley<sup>'813</sup> reads on the feature of *an output device that outputs the sound information to a user (28 in figure 1).*

12. Regarding claims 36 and 38, the claims are set forth with the same limitations as claim 35. Marley<sup>'813</sup> reads on the feature where *the sound recognition processor performs sound recognition* (for claim 38, "*linguistic sound recognition*" – see column 7

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lines 7-10) *in view of a physical state of the user* (column 3 lines 57-60), *an operating condition of the prosthetic hearing device or a purpose for use of the device by the user.*

13. Regarding claim 39 as understood by the Examiner, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> reads on the feature where *the sound information generator transforms the linguistic sound into a syntactically different form* (24→12 in figure 3, 24→28 in figure 1).

14. Regarding claim 41, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> reads on the feature where *the sound information generator reproduces sound information previously produced when it determines from results of speech recognition by the sound recognition processor that it is necessary to reproduce the previously produced sound information* (claim 4 lines 27-28).

### ***Claim Rejections - 35 USC § 103***

#### **Marley<sup>'813</sup> & Watanabe *et al***

15. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marley<sup>'813</sup> in view of Watanabe *et al* (U.S. Patent 4,653,097 A).

16. Regarding claim 37, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> teaches the feature where *the sound recognition processor performs speaker*

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*recognition; speaker identification or speaker verification* (column 1 lines 32-34) but fails to teach the feature of *acknowledging speakers*.

Watanabe et al, with the invention for *individual verification apparatus* reads on the feature that *the sound information generator generates sound information representing results of the recognition, identification and/or verification* (claim 2 lines 32-34 – see S36 in figure 6).

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Watanabe et al to the device/method of Marley<sup>'813</sup> so as to indicate that the authorization attempt was valid or unrecognized.

**Marley<sup>'813</sup> & Amano et al**

17. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marley<sup>'813</sup> in view of Amano et al (Japan Patent 02-014000 A).

18. Regarding claim 37, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> does not mention adding modifiers to a language. Amano et al, with the invention for a *voice-recognizing* device, teaches the feature where *the sound information generator transforms the linguistic sound by adding thereto a modifying language* (with the *post-processing* of lines 3-4 of paragraph [57], Purpose. It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Amano et al to the



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device/method of Marley<sup>'813</sup> as a form of the well-known step of *normalizing* to complete abbreviations, define acronyms and finish uncompleted aphorisms.

**Marley<sup>'813</sup> & Yamamoto**

19. Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marley<sup>'813</sup> in view of Yamamoto (Japan Patent 58-062738).

20. Regarding claim 42, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> does not mention *repeating synthesized sound*. Yamamoto, with the invention *to understand a message by changing the speed of utterance of same messages repeatedly in response to the instruction of repetition by the operator reads on the feature where, when receiving a reproduction instruction through the input device from the user, reproduces sound information previously produced* (last 2 lines of paragraph [57], *constitution*). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method and/or teachings of Yamamoto to the device/method of Marley<sup>'813</sup> to insure that the listener is given every opportunity to receive and understand the information.

21. Regarding claim 43, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> does not mention *repeating synthesized sound at different speed*. Yamamoto reads on the feature where *the sound information generator controls an output rate of the sound information* (1<sup>st</sup> line of last 2 lines of paragraph [57], *purpose*). It would have

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been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method and/or teachings of Yamamoto to the device/method of Marley<sup>'813</sup> to insure that the repetition of "misheard" done in such a way to facilitate understanding rather than to limit time, the element of time having been made irrelevant due to the hearing error.

**Marley<sup>'813</sup> & Coker et al**

22. Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marley<sup>'813</sup> in view of Coker et al (U.S. Patent 3,704,345 A).

23. Regarding claim 44 as understood by the Examiner, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> does not mention *formants*. Coker et al, with the invention for *conversion of printed text into synthetic speech*, reads on the feature where *the output device outputs the sound information using a formant synthesized by the sound information generator* (column 13 lines 24-29).

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Coker et al to the device/method of Marley<sup>'813</sup> so as to produce a quantifiable sound.

24. Regarding claim 45 as understood by the Examiner, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> does not mention *formants*. Coker et al, with the invention for *conversion of printed text into synthetic speech*, reads on the feature of

*a memory that has stored a library of formants, where the output device outputs the sound information using a formant selected by the sound information generator from the library (column 13 lines 27-29).*

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method and/or teachings of Coker *et al* to the device and/or method of Marley<sup>'813</sup> so as to save processing by eliminating redundant creating operations.

#### **Marley<sup>'813</sup> & Takegawa**

25. Claims 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marley<sup>'813</sup> in view of Takegawa (Japan Patent 10-123450).

26. Regarding claim 46, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> does not mention *foreign language*. Takegawa reads on the feature where *the sound information generator generates the sound information in languages different from a language of the detected linguistic sound* (paragraph [0003] line 3). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Takegawa to the device/method of Marley<sup>'813</sup> so as to provide a translation for one individual without disrupting others.

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27. Regarding claim 47 as understood by the Examiner, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> does not mention *abridging*. Takegawa, with the invention for a *heads up display device with sound recognizing function for converting a sound signal collected by a microphone input, converted into a character signal (text data) and sent to an output terminal, converted into a picture by a liquid crystal display device and displaying the picture*, reads on the feature where the sound information generator generates the sound information abridging a content of the linguistic sound (with *converting*, line 2 of the *problems to be solved* section (57) in the Abstract).

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method and/or teachings of Takegawa to the device/method of Marley<sup>'813</sup> in order to visualize the source of a sound.

**Marley<sup>'813</sup> & Butnaru et al**

28. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marley<sup>'813</sup> in view of Butnaru et al (U.S. Patent 6,240,392 B1).

29. Regarding claim 48, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> performs *verbatim*, which does not correlate to providing *semantic meaning*. Butnaru et al, with the invention for *communication for deaf and mute persons*, reads on the feature where the sound information generator displays on the display an image associated with the semantic meaning in the linguistic sound (lines 14-18 in the

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Abstract). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method and/or teachings of Butnaru et al to the device and/or method of Marley<sup>'813</sup> in order to visualize a sound.

**Marley<sup>'813</sup>, Butnaru et al, Hoffberg et al<sup>'996</sup> & Tsukahara**

30. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marley<sup>'813</sup> in view of Butnaru et al and further in view of Hoffberg et al<sup>'996</sup> (U.S. Patent 6,400,996 B1) and further in view of Tsukahara (U.S. Patent 6,460,056 B1).

31. Regarding claim 4, the claim is set forth with the same limitations as claim 48. Marley<sup>'813</sup> reads on the feature that *selects and displays at least one image associated with the semantic meaning in the linguistic sound* (10 in figure 1) but neither Marley<sup>'813</sup> nor Butnaru et al specify a *multimedia library*.

Hoffberg et al<sup>'996</sup>, with the invention for *adaptive pattern recognition based control*, teaches the features of *a library of images comprising still and motion pictures*, (column 42 line 7 – see column 124 lines 45-67)), *symbols* (column 74 line 11), *characters*, (column 124 line 49), *notes*, (as *videotext*, column 124 lines 49 & 58), *photos* (as *frame* in column 125 line 3), *animations*, (column 102 line 23), *illustrations*, (to enhance, column 124 line 59 – see column 125 lines 5-7) and *colors*, (column 125 line 8) but does not mention *spectral patterns*.

Tsukahara et al, with the method of analyzing input speech and speech analysis apparatus, reads on the feature of voice spectrum patterns (column 3 lines 2-5). ... It

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would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Hoffberg et al<sup>'996</sup> & Tsukahara to the device/method of Marley<sup>'813</sup> & Butnaru et al to provide a desired user function from a single source.

**Marley<sup>'813</sup>, Butnaru et al & Horii**

32. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marley<sup>'813</sup> in view of Butnaru et al and further in view of Horii (U.S. Patent 6,460,056).

33. Regarding claim 50, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> does not mention *sign language* while Butnaru et al obviates it. Horii, with the invention for *displaying sign language images corresponding to input information*, reads on the feature where *the sound information generator translates the linguistic sound into a sign language representing the semantic meaning in the linguistic sound and displays the sign language* (Abstract lines 5-9). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method and/or teachings of Horii to the device and/or method of Marley<sup>'813</sup> & Butnaru et al in order to display images corresponding to a document.

**Marley<sup>'813</sup> & Hoffberg et al<sup>'996</sup>**

34. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marley<sup>'813</sup> in view of Hoffberg et al<sup>'996</sup>.

35. Regarding claim 51, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> does not indicate *more than one source of input*. Hoffberg et al<sup>'996</sup> reads on the feature where *the sensor selectively detects a linguistic sound from a specific sound sources* (column 61 lines 39-45). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Hoffberg et al<sup>'996</sup> to the device/method of Marley<sup>'813</sup> to resolve the well-known "cocktail party" environmental situation of concentrating on one audio signal from many in a noisy environment.

**Marley<sup>'813</sup> & Abe<sup>'705</sup>**

36. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marley<sup>'813</sup> in view of Abe et al<sup>'705</sup>.

37. Regarding claim 52, the claim is set forth with the same limitations as claim 35. Marley<sup>'813</sup> does not employ a video camera. Abe et al<sup>'705</sup>, with the invention for *sign language translation*, reads on the feature of *further comprising a video camera* (column 4 line 21), where *the sound information generator interprets a sign language captured by the camera and generates sound information representing the interpreted sign language* (column 9 lines 28-30 & 37-39). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Abe et al<sup>'705</sup> to the device/method of Marley<sup>'813</sup>, employing

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existing security equipment as assistive technology to provide alternative access for individuals with disabilities, thus avoiding a separate keyboard component.

### ***Conclusion***

38. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hoffberg et al<sup>145</sup> (U.S. Patent 6,640,145 B2) media recording device with packet data interface.
- Tsiang (U.S. Patent 5,377,302 A) system for recognizing speech.
- Bellegarda et al (U.S. Patent 5,502,774 A) automatic recognition of a consistent message using multiple complimentary sources of information.
- Abe et al<sup>050</sup> (U.S. Patent 5,544,050 A) sign language learning system and method.
- Okada et al (Japan Patent 02-011438) device for reading information outside vehicle by recognizing an object, extracting the recognition signals, and distinguishing the existence of the approaching object from the compared result and giving warning. An optical recognizing recognizes an object by means of light, sound waves, or electromagnetic waves, etc. and which outputs the image of the object.
- Numata et al (Japan Patent 2003-044497) mobile picture book for telling a name or the like for the image or sound of an object.
- Tsurata (Japan Patent 04-075098) position of voice recognition



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- Dutta et al (U.S. Patent 6,453,294 B1) dynamic destination-determined multimedia avatars for interactive on-line communications.
- Preston (U.S. Patent 3,636,261 A) method and apparatus for optical speech correlation.
- Hatazaki (U.S. Patent 5,671,329 A) speech dialogue system in which recognition and understanding process, application process, and voice input response are performed simultaneously with voice input.
- Marley<sup>'846</sup> (U.S. Patent 4,284,846 A) System and method for sound recognition.
- Bellegarda et al<sup>'774</sup> (U.S. Patent 5,502,774 A) automatic recognition of a consistent message using multiple complimentary sources of information.
- Bellegarda et al<sup>'809</sup> (U.S. Patent 5,621,809 A) computer program product for automatic recognition of a consistent message using multiple complimentary sources of information.

39. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel A. Nolan at telephone (703) 305-1368 whose normal business hours are Mon, Tue, Thu & Fri, from 7 AM to 5 PM.

If attempts to contact the examiner by telephone are unsuccessful, supervisor Richemond Dorvil can be reached at (703)305-9645.

The fax phone number for Technology Center 2600 is (703)872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal

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communications as "EXPEDITED PROCEDURE". Formal response to this action may be faxed according to the above instructions,

or mailed to:

P.O. Box 1450  
Alexandria, VA 22313-1450

or hand-deliver to: Crystal Park 2,  
2121 Crystal Drive, Arlington, VA,  
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 Customer Service Office at telephone number (703) 306-0377.

Daniel A. Nolan  
Examiner  
Art Unit 2654

DAN/d  
May 17, 2004

  
RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER